sequence which is complementary to at least part of a nucleotide sequence of a pest target gene that causes the disease or condition.

[0207] While the inventive compositions may be used for treating a disease or condition in a subject patient, the compositions and methods may also be used as a means for protecting a substrate or material from pest infestation. The nature of the excipients included in the composition and the physical form of the composition may vary depending upon the nature of the substrate that it is desired to treat.

[0208] For example, such a composition may be a coating or a powder that can be applied to a substrate as a means for protecting the substrate from infestation by an insect and thereby preventing pest-induced damage to the substrate or material. Thus, in one embodiment, the composition is in the form of a coating on a suitable surface which adheres to, and is eventually ingested by an insect which comes into contact with the coating. Such a composition can be used to protect any substrate or material that is susceptible to infestation by or damage caused by a pest, for example foodstuffs and other perishable materials, and substrates such as wood.

[0209] For example, the composition may be a liquid that is brushed or sprayed onto or imprinted into the material or substrate to be treated. Thus, a human user can spray the insect or the substrate directly with the composition

[0210] For example, houses and other wood products can be destroyed by termites, powder post beetles, and carpenter ants. By treating wood or house siding with a composition comprising a dsRNA, it may be possible to reduce pest infestation. Likewise, a tree trunk may be treated with a composition comprising a dsRNA.

[0211] Flour beetles, grain weevils, meal moths, and other pests feed on stored grain, cereals, pet food, powdered chocolate, and almost everything else in the kitchen pantry that is not protected. Accordingly, the present invention provides a means for treating cereal boxes and other food storage containers and wrapping with a composition comprising a target dsRNA.

[0212] Larvae of clothes moths eat clothes made from animal products, such as fur, silk and wool. Thus, it may be desirable to treat hangers, closet organizers, and garment bags with the inventive dsRNA. Book lice and silverfish are pests of libraries because they eat the starchy glue in the bindings of books. Accordingly, the present invention provides compositions for treating books from pest infestation and destruction.

[0213] In one embodiment, the composition is in the form of a bait. The bait is designed to lure the insect to come into contact with the composition. Upon coming into contact therewith, the composition is then internalized by the insect, by ingestion for example and mediates RNAi to thus kill the insect. The bait may depend on the species being targeted. An attractant may also be used. The attractant may be a pheromone, such as a male or female pheromone for example. The attractant acts to lure the insect to the bait, and may be targeted for a particular insect or may attract a whole range of insects. The bait may be in any suitable form, such as a solid, paste, pellet or powdered form.

[0214] The bait may also be carried away by the insect back to the colony. The bait may then act as a food source for other members of the colony, thus providing an effective control of a large number of insects and potentially an entire insect pest colony. This is an advantage associated with use of the double stranded RNA or bacteria expressing the dsRNA of the invention, because the delayed action of the RNAi mediated effects on the pests allows the bait to be carried back to the colony, thus delivering maximal impact in terms of exposure to the insects.

[0215] The baits may be provided in a suitable "housing" or "trap". Such housings and traps are commercially available and existing traps may be adapted to include the compositions of the invention. The housing or trap may be box-shaped for example, and may be provided in pre-formed condition or may be formed of foldable cardboard for example. Suitable materials for a housing or trap include plastics and cardboard, particularly corrugated cardboard. The inside surfaces of the traps may be lined with a sticky substance in order to restrict movement of the insect once inside the trap. The housing or trap may contain a suitable trough inside which can hold the bait in place. A trap is distinguished from a housing because the insect can not readily leave a trap following entry, whereas a housing acts as a "feeding station" which provides the insect arachnid with a preferred environment in which they can feed and feel safe from predators.

[0216] It is clear that numerous products and substrates can be treated with the inventive compositions for reducing pest infestation. Of course, the nature of the excipients and the physical form of the composition may vary depending upon the nature of the substrate that is desired to treat. For example, the composition may be a liquid that is brushed or sprayed onto or imprinted into the material or substrate to be treated, or a coating that is applied to the material or substrate to be treated.

[0217] Specific examples are presented below of methods for identifying target sequences and introducing the sequences into various cells and compositions. They are meant to be exemplary and not as limitations on the present invention.

Example 1

Silencing *C. elegans* Target Genes in *C. elegans* in High Throughput Screening

[0218] A *C. elegans* genome wide library was prepared in the pGN9A vector (WO 01/88121) between two identical T7-promoters and terminators, driving its expression in the sense and antisense direction upon expression of the T7 polymerase, which was induced by IPTG.

[0219] This library was transformed into the bacterial strain AB301-105 (DE3) in 96 well plate format. For the genome wide screening, these bacterial cells were fed to the nuclease deficient *C. elegans* nuc-1 (e1392) strain.

[0220] Feeding the dsRNA produced in the bacterial strain AB301-105 (DE3), to *C. elegans* nuc-1 (e1392) worms, was performed in a 96 well plate format as follows: nuc-1 eggs were transferred to a separate plate and allowed to hatch simultaneously at 20° C. for synchronization of the L1 generation. 96 well plates were filled with 100 μL liquid growth medium comprising IPTG and with 10 μL bacterial cell culture of OD_{600}1 AB301-105 (DE3) of the *C. elegans* dsRNA library carrying each a vector with a *C. elegans* genomic fragment for expression of the dsRNA. To each well, 4 of the synchronized L1 worms were added and were incubated at 25° C. for at least 4 to 5 days. These experiments were performed in quadruplicate. In the screen 6 controls were used:

[0221] pGN29=negative control, wild type

[0222] pGZ1=unc-22=twitcher phenotype

[0223] pGZ18=chitin synthase=embryonic lethal